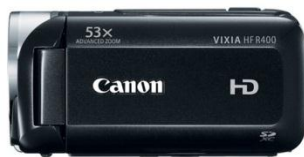


# ATUS CLASSROOM SERVICES' EQUIPMENT GUIDEBOOK



Photography



Video



Audio Recording



Computers



Media Storage



Lighting



Projection/Display/Players



Sound Systems



Accessories/Misc.

Located: Haggard Hall 114

Open: Monday – Friday

Phone Extension: x3300

# Table of Contents

<b>Welcome to ATUS &amp; Rules of Check Out.....</b>	<b>4</b>
------------------------------------------------------	----------

<b>Equipment Checkout / Return Procedures.....</b>	<b>5</b>
----------------------------------------------------	----------

<b>Section</b>	<b>Equipment Type</b>	<b>Inventory Number</b>	<b>Pg.</b>
----------------	-----------------------	-------------------------	------------

<b>A. Photography.....</b>			<b>6</b>
----------------------------	--	--	----------



Basic Point/Shoot  
Canon SLR20D

KDF, KDK  
SLR

<b>B. Photography &amp; Video.....</b>			<b>8</b>
----------------------------------------	--	--	----------



Canon SLR5D Mark II  
Canon SLR5D Mark III  
Panasonic Lumix

SLR5D  
SLR5D3  
LMX

<b>C. Video.....</b>			<b>12</b>
----------------------	--	--	-----------



Canon Vixia  
EZ Cam ZX1 & Play Touch  
GoPro HD Hero  
Panasonic Pro P2  
Canon XL2 3CC (Mini DV)  
Canon GL2 (Mini DV)

HDV  
EZCAM / EZCAMW  
GOPRO  
HDV 4/5  
VDA 400s  
VDA 300s

<b>D. Audio Recording.....</b>			<b>16</b>
--------------------------------	--	--	-----------



Tape Based Recording – Analog Audio  
**Digital Audio**  
Marantz Audio Recorders  
Zoom H2 Recorder  
Zoom H2next Recorder  
Zoom H4next Recorder

ACX,CDA, ACM  
  
DAR 100s/200s  
DAR 300s  
DAR 400s  
DAR 500s

<b>D1. Audio Recording – Microphones.....</b>			<b>21</b>
-----------------------------------------------	--	--	-----------



Handheld Cardioid Microphones  
Lavalier Microphones (Wireless/Wired)  
Wireless Mic Systems (Lapel & Handheld)  
USB Mics  
Tabletop Microphones  
Mounted Camera Microphones  
Shotgun Mics & Booms  
Misc. Microphones / Accessories

AMU  
CMW100/300, AMW 200, AML  
AMW 400s  
USB-MIC/SPKPHO/AD  
AMT  
SHOEMIC /AMT  
AMG/BOOM  
-

<b>E. Computers.....</b>			<b>27</b>
--------------------------	--	--	-----------



Windows PC  
Apple MacBook  
Apple MacBook Pro

WWD  
MAC  
MACPRO

iPod Touch  
Accessories (PowerPoint Clickers/mouse/scanner)

## **F. Media Storage.....30**



Lacie 80g "Portable"	VSD 30-38
LaCie LTD – 160G "Desktop"	VSD 1-30 / 40-48
LaCie Rugged 500 GB "Portable"	EXHD
Western Digital "Desktop"	DNCDRV/ EXHDL

## **G. Lighting.....32**

Light Kits	LK
------------	----

## **H. Projection/Display/Video Players.....34**



Epson Projectors – Small Lightweight & Portable	MPE,LCD
Epson "High Definition" Projector	LCDHD
Other Projectors	MPF,MPD
Resident Hall Projector	RES102
Older Projectors – Overhead/Slide/Opaque/ 16/8mm	-
Screens (Portable)	J
Sony DVD Recorder	DVDR
DVD/VHS Players/Blu-Ray	DHS, DVD, DVDBLU
External Drive/Burner (Blu-ray Available)	DVDUSB, DVDBLUUSB-1
Document Camera (Wolf Vision/Ladybug)	VDC, DOCCAM
Small TV	VMB 76

## **I. Sound Systems.....43**



Portable PA Systems	PAM, PAE, PAD, PAG, PAD
Small PA systems	PAB, PAF
Computer Speakers	COMPSPK
Conference Phones	TLC101, CONFPHO1
Audio Mixers	MIX

## **J. Accessories and Miscellaneous Equipment.....51**

### **J1. Camera Accessories**



Car Mount, Gel Kit, Reflectors  
Crane, Glide Cam Stabilizer, Clipper Board, Field Monitor  
Tripods  
Firestore (for DV Cameras)

### **J2. Transcribers**

Transcribers: Standard Cassette, Microcassette, and Digital

### **J3. Misc. Equipment**

Personal FM Listening System	Phantom Power Supply
Audio Interface/Converter Mixer	Telephone handset Tap
Audio-video extender	Scan Converter UXGA to NTSC Converter
Wireless audio transmitter	USB Digital and analog audio interface
Cell phone interface	USB Preamp
Audio DI box	VGA Wireless Transmitter
Hard drive: Dock, Interface	Dazzle Video Creator
HDMI Converters: Component, VGA	Film to Video Converter
Headphone Converter	Turntables

# Welcome to ATUS

## Classroom Services!

Classroom Services is here to help with your technological needs.

- We provide support for technical equipment inside classrooms.
- We also provide a wide array of equipment available for checkout. We can provide tutorials for our equipment.

### Rules of Equipment Checkout

- **Academic Use** – Our equipment is free of charge to students/faculty/staff for academically related uses. Other uses & self-sustaining programs are subject to rental fees.
- **Completely fill out checkout card** – Name, W#, and other relevant information. Be sure to read & sign the back!
- **Next Day Return** – Unless otherwise specified, all checkouts are due on the following weekday.
- **Late Fees** – Late fees are assessed when equipment becomes overdue.
- **Reserving Equipment** – Reserving equipment ahead of time is recommended to ensure that you get what you need. Reserving equipment on back to back days is not allowed.
- **Extended Checkouts** – To request equipment checkout for an extended period of time, communicate with Gary Malick, Manager of ATUS Classroom Services at [Gary.Malick@wwu.edu](mailto:Gary.Malick@wwu.edu)
- **Call us!** – Our phone extension is x3300. Call to ask questions, reserve equipment or to notify us of changes to your equipment checkout.



# (A) Photography

## Basic Still Image Cameras

### Basic Point & Shoot Cameras – Fujifilm & Kodak

4, 5 Megapixels, Very simple to use, little experience necessary

Takes XD-Picture Card Flash Memory Card, Comes with card reader, 2 AA Batteries

#### FUJIFILM Finepix A345

ATUS: KDF 101, KDF 104



#### Kodak EasyShare C530

ATUS: KDK104, KDK 105



### Canon 20D EOS 8.2 MP Digital SLR Camera

ATUS: SLR3-SLR11

**8.2-megapixel** sensor captures 3504 by 2336 pixel JPEG or RAW images

Includes 18-55mm (3x Optical zoom) f/3.5-5.6 autofocus lens

Store images on CompactFlash memory card (**1 GB or 2GB**)

Powered by rechargeable BP-511A 1390mAh battery pack

500-1000 pictures on one charge with normal use

Shooting Modes: Landscape, Portrait mode, Macro,

Close-up, Night portrait, Sports mode

Display Size: 1.8 inches, Weight: 1.5 pounds

Pop-up flash, USB Port, Video Out, PC Terminal

Comes with Card Reader, **Optional Remote control**



# (B) Photography & Video

## Advanced Photography/Video Recording

### Canon EOS 5D Mark II – 21.1 MP Full Frame CMOS Digital SLR Camera

ATUS: SLR5D1-SLR5D10

**Summary:** This camera takes amazing quality photos as well as video. The 5D stands out with its huge resolution, noticeable depth of field, and industry leading excellence & build.

**21.1-megapixel** full-frame CMOS sensor  
Wide range ISO setting 100-6400  
Includes Canon EF 24-105mm f/4 L IS USM Lens  
DIGIC 4 Image Processor  
high-performance 3.9 fps continuous shooting

Live View Function for stills

**Full HD video capture at 1920x1080 resolution**

(@ 30fps) for up to 4GB per clip ;

Updated EOS Integrated Cleaning System

Optical zoom: 4.3 x

Maximum Aperture Range: F/4.0

Minimum focal length: 24 millimeters

Maximum focal length: 105 millimeters

Included Flash Type: None

Display Size: 3 inches

Image types: JPEG, RAW

Shooting Modes: Landscape, Portrait mode,

Neutral, Faithful, Portrait, Monochrome

Weight: 1.8 pounds, Battery: LP-E6 battery

Battery Life: Normal use = 850 Shots / Live view =

200 shots / Movie mode: ~2 Hours

Manages/Monitors up to 6 Batteries

#### Inputs/Outputs:

AV Out USB 2.0, HDMI mini out, Mic input (For video recording), PC Terminal for Flash unit

Optional remote control

**Note\*** Please use the USB cord in the bag to transfer data from the CF Card. **Do not remove the CF card.**



## Canon EOS 5D Mark III

ATUS: SLR5D30-39



### Summary



5D Comparison	Mark 3	Mark 2
Sensor	22.3 MP full-frame CMOS	21 MP full-frame CMOS
Processor	Digic 5+	Digic 4
ISO range	50 - 102800	50 - 25600
Maximum shooting rate	6fps	3.9fps
Viewfinder coverage	100%	98%
LCD screen	3.2" - 1,040,000 dots	3.0" - 920,000 dots
AF Sensor	61 points	9 points
CA correction	Yes	No
All-I and IPV video compression options	Yes	No
Touch-sensitive rear dial	Yes	No
Headphone socket	Yes	No
HDR shooting	Yes	No
Multiple exposure	Yes	No
Silent shutter	Yes	No
Side-by-side image comparison	Yes	No

## Portable High Definition Point & Shoot

### Panasonic Lumix DMC-GF2 12MP Digital Camera

ATUS: LMX-1, 2, 3, 4

12.1-megapixel multi-aspect Live MOS Sensor; Micro Four Thirds format camera

Saves to SD Card – 8GB Card installed

Kit includes 14-42mm lens; capture high-quality photos in 3D with optional lens

Full HD video capability; Venus Engine FHD enables Intelligent Resolution technology

3-inch free-angle touch-screen LCD;

Built-in flash; compact, lightweight design

Optical zoom: 3 x

Maximum Aperture Range: F/3.5-5.6

Minimum focal length: 14 millimeters

Maximum focal length: 42 millimeters

Included Flash Type: Pop-up flash

Display Size: 3 inches

Image types: JPEG, RAW

Exposure Control Type: Soft skin, Baby1, Baby2, Portrait mode, Peripheral defocus, Architecture, Party/indoor, Night portrait, Pet, Scenery, Food, Low light, Illumination snap, Flower, Night scene, Sports mode, Sunset

**Weight: ~1/2 Pound**



# (C) Video

## General Video Recording

### Canon Vixia (HDV) – HFS100/200, HFM400, HF M500, HF R300/400

**Summary:** This camcorder records in high definition and is very user friendly. Its touch screen is intuitive and it has a wide variety of video recording options. It includes many inputs/outputs that are standard with today's video recording equipment.

**Card Sizes:** 4 – 32Gigabyte (12 Hours recording max on 32g)

**Records in:** High Definition (HD) -1920 x1080 (Requires Class 4 or higher SDHC Card)

**Camera Type:** 3 Chip, 8.0 Megapixel Camera

#### Inputs/Outputs

**Microphone/Headphone Jack:** Yes

**S-Video:** No, component instead

**Zoom:** 10x Optical, 200 digital

**Composite In/Out Port:** Yes

**USB:** Yes

**Screen:** 2.7 – 3.5 inch LCD

**Firewire:** No

**Hdmi Out:** Yes

**Note\*** These camera mostly have identical functionality. The later models provide a bit more usability with more advanced touch controls. HDV 43-62 can record in MP4 without the 30 minute restriction the other Vixias have. Upload through USB and video editing software, press “export from camera”.



HFS100 HDV 1-3



HFS200 DNCHDV 1-5



HFM400 HDV 6-14



HF M500 HDV 21-32



HF R300 HDV 33-42



HF R400 HDV 43-62

## Portable Video Recording

### Kodak EasyCam – ZX1

**Summary:** Very simple to use HD handheld camcorder. Records in 720p with widescreen aspect ratio.

ATUS: **EZCAM 1-25**

Camera comes with an **8 GB SD Card**. Camera **uses AA batteries**.

Record High Definition video (720p at 60 fps with 16:9 aspect ratios)

Rubberized doors protect ports; resistant to rain, snow, dirt, etc

Easily upload recorded footage to YouTube with built-in USB and software

Vibrant 2.0-inch viewfinder; Watch footage on HDTV with included cables

Built-in video editing software; expandable SD/SDHC card slot that can hold up to 32 GB, SD Card Port, AV Out, HDMI Out



### Kodak PlayTouch – zi10

ATUS: **EZCAMW 1-10**

Similar to the EasyCam above with some major upgrades.

Records in 1080p with advanced menu controls. Includes Mic in. Comes with 16G Card.

**Inputs:**

HDMI, USB, A/V, Microphone /Headphones



### GoPro HERO Recorders

ATUS: **GOPRO 1,2,4 (Silver)**

**HERO3 Black GOPRO 3, 5**

Battery is charged via USB cable. Uses a **16 GB SD Card**

Professional-grade full HD video up to 1080p

60 frames per second option in 720p and WVGA resolutions

provides smooth slow motion playback

Industry's widest angle (170°) and sharpest lens captures more of the scene

Optional mounts for attaching camera to virtually all helmets

Inputs/Outputs: HDTV, USB, TV/Audio

Port, SD Card Slot



**HERO3:**

Wifi enable, 30% smaller, 25% lighter. Can record at ultra-wide 1440p 48 fps. 12 mp photos.



## Professional Video Recording

### Panasonic Pro P2 – AG-HPX170 3CCD P2 High-Definition Camcorder

**Summary:** This camera is one of our more advanced pieces of equipment. Training from ATUS staff is required prior to checkout. It records in High Definition with a lot of options to modify the recording.

ATUS: **HDV 4, 5**

Full production quality, 4:2:2 1080/ 720/ SD P2HD  
Hand-Held camcorder

1-Chip or 3-Chip: **3-Chip**

Card: **32 GB and 16GB P2 Card**

Standard or High Def: **High Definition**

Firewire (DV) Port: **Yes**

Microphone Input: **2 XLR mic inputs / 4 Channels**  
(External Shotgun mic attached)

Composite In/Out Port: **Yes**

S-Video: **No – Component Video instead**

Headphone Jack: **Yes**

Zoom: **10X, 5X, 2x Digital Zoom (13x Optical Zoom)**

Lens: **Leica Dicomar 13x lens**

Extras:

1GB~1Minute of HD footage

P2 Cards: 1.2Gbps transfer speed

~140 minutes of continuous recording w/ fully  
charged battery

2x P2 Card Slots for Video & 1x SD Memory Card Slot

Includes three different advanced focus assist functions  
6 pin Firewire with locking connection. (no power out)

Color Bars with 1kHz Tone

WaveForm Monitor and Vectorscope

20 Variable Frame Rates: 12, 15, 18, 20, 21, 22, 24,

25, 26, 27, 28, 30, 32, 34, 36, 40, 44, 48, 54, 60

Security Cable Attachment Hole

Iris/focus ring assignment switch so that focus ring can  
be the iris

Time & date stamp burn-in

Most cables facing rear to reduce conflicts, Audio  
connections in the same place

LCD Screen can be flipped for use with 35mm adapters

---Cameras currently come with 1 16GB card and 1  
32GB card.



(w/ optional Shotgun Mic attached)

## Mini DV Tape Video Recording

### Canon XL2 3CCD MiniDV Camcorder

ATUS: **VDA401, 402. Accessory Bags: 401a, 402a**

1-Chip or 3-Chip: **3-Chip**

Cassette: **MiniDV Cassette Tape**

Standard or High Def: **Standard**

Firewire (DV) Port: **Yes**

Microphone Input: **2 XLR mic inputs / 4 Channels**  
**(External Shotgun mic attached)**

Composite In/Out Port: **Yes – 2 & 4 Channel**

S-Video: **Yes**

Headphone Jack: **Yes**

Screen Size: **NO LCD screen**

Zoom: **20x optical zoom lens**

Lens: **Professional L-Series Fluorite lens**

Extras:

Video Terminal (BNC), Shoulder rest

16:9 widescreen and 4:3 ratio – (Canon's 20x Professional L-Series Fluorite lens for the XL2 is the equivalent, in 35mm format, of a 42.3 - 846mm lens when the camera is recording in 16:9 widescreen format. When the 20x Professional L-Series Fluorite lens for the XL2 is recording video in the TV-standard 4:3 aspect ratio, it is the equivalent, in 35mm format, of a 51.8 - 1036mm lens).



### Canon GL2

ATUS: **VDA 301-310**

1-Chip or 3-Chip: **3-Chip**

Cassette: **MiniDV Cassette Tape**

Standard or High Def: **Standard**

**Inputs:** Firewire, Microphone, Composite, S-Video,  
Headphone, USB, DC5V

**(Small external omni-directional  
microphone attached)**

Screen Size: **2.5-inch LCD with 270-degree rotation**

Zoom: **20x optical zoom lens (digital zoom to 100x)**

Lens: **Canon Professional L-Series (luxury) Fluorite Lens**  
**(Widescreen lens available)**

Extras:

Record for up to 65 minutes on one battery charge

Take pictures: **1.7-megapixel photo mode w/ SD Card**



# (D) Audio Recording

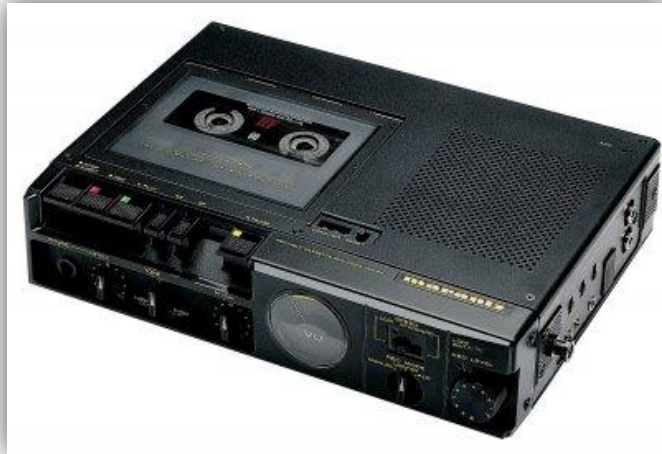
## Tape Based Recording – Analog Audio

### Misc. Analog Recorders

#### MARANTZ PMD201 Portable Cassette Recorder

ATUS: ACX 3, ACB 103-106

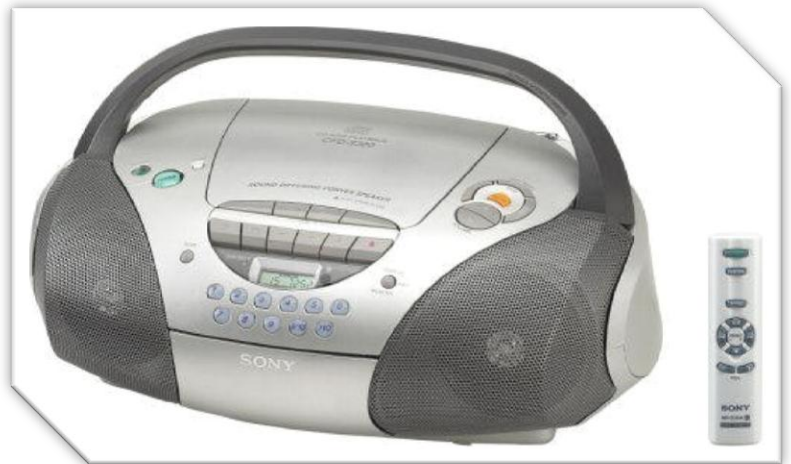
- Easy to use, high performance portable cassette recorders.
- Small & lightweight
- Can be operated with AC, rechargeable NiCad battery packs, automotive electrical systems, or alkaline batteries
- 2 heads
- Built-in speaker & microphone



#### Sony CFD-S300 CD Radio Cassette Recorder Boom box

ATUS: CDA 106-108 / 3 in inventory

- CD, cassette, and radio Boombox with CD-cassette synchro dubbing
- 2.3 per channel x 2, with two 4-inch speakers
- Slim, basic-function remote control simplifies listening
- Offers 10 front-panel direct-access buttons for tuner and CD; 20 FM and 10 AM station presets; drift-free digital PLL tuning
- Audio CD-R/CD-RW playback compatibility, 20-track programming, and Mega Bass low-end enhancement



## Sony CFS-W338 Stereo Boom box with Dual Cassette Decks

ATUS: **ACR501 / 1 in inventory**

- Dual stereo cassette decks
- 2-Speed Tape Dubbing
- AM/FM stereo tuner
- Stereo record/playback cassette deck
- 2-speed synchronized tape dubbing
- Built-in microphone



## Sony TC-270 Stereo Tape recorder

### **Specifications**

**Track system:** four track stereo and mono

**Reel size:** 7" (18cm) maximum

**Tape speed:** 19, 9.5 and 4.8 cm/s

**Frequency response:** 30 to 18,000Hz (19 cm/s)

**Signal to noise ratio:** 50dB or more

**Wow and flutter:** 0.12% (19 cm/s)

**Semiconductors:** 18 transistors and 4 diodes

**Dimensions:** 513 x 260 x 387mm

**Weight:** 16.5kg



## SONY TCM-20DV

ATUS: **ACM 33-47**

- Double Recording Time gives you the option of recording on a standard cassette at either normal speed or half the normal speed, for extended recording or dictation sessions.
- Clear Voice sound system enhances voice quality during recording and playback for greater clarity.
- Microphone jack allows connection of an external microphone for greater flexibility.
- Automatic Shut-Off at end of tape reduces mechanical wear and conserves battery power.
- Cue/Review Function provides sound during fast forward and Rewind modes to help find specific passages.



## RADIOSHACK 14-1148 Micro-cassette

ATUS: **ADT 101, ACM 31**

- 2 speed Recorder
- Built in speakers



# Digital Audio Recording

## Marantz

### Marantz PMD660 Professional Portable Digital Recorder Marantz

ATUS: DAR101-106

Portable, solid-state, compact flash audio field recorder

2 Built-in stereo condenser mics with Automatic Level Control (ALC)

2 XLR microphone connections with 48 volt phantom power

2 stereo line I/O

It can record in raw WAV or MP3 formats.

Uncompressed WAV files can be recorded at 44.1 or 48 kHz, and high quality MP3 files can be recorded in mono (at 64 kbps) or in stereo (at 128 kbps).

Powered with four AA-sized batteries

Battery life: 3.5 to 4 hours      Weight: 2.8 pounds

1 GB Compact Flash card = Over 1 hour stereo, 3 hours mono of uncompressed audio, over 17 hours of stereo MP3, almost 36 hours of monaural MP3 audio.

*To avoid hiss caused by native sub-standard microphone pre-amps: The problem can be avoided by using a 3rd party mic pre-amp, and routing the input signal into the line-inputs.*



### Marantz PMD620 Solid State Handheld SD MP3/WAV Recorder

ATUS: DAR 301

One Touch Stereo or Mono Recording

Uses SD/SDHC Cards for Recording Uncompressed WAV or MP3 files

2 Condenser Microphones & Built-in Monitor Speaker

16-Bit or 24-Bit Linear PCM Recording at 44.1 or 48kHz Sample Rates for WAV Files

Operates on 2-AA Alkaline or NiMH Batteries

Battery Life (Alkaline): 5 hours (Typical)

Weight (minus batteries): ¼ pound

Recording MP3 Bit-rate: Stereo: 192/128/64 kbps      Mono: 96/64/32 kbps

Line in/Headphone Out: 1/8" Stereo Jack



# ZOOM Professional Audio Recording

**Summary:** ZOOMs are our most frequently checked out audio recorders. They provide crystal clear audio recording, are easy to step up and control, connect via USB for quick drag & drop. They are ideal recorders for general uses, interviews, and other high quality sound needs.

## ZOOM H2 – Handy Portable Stereo Recorder

ATUS: **DAR 302-319**

Records in WAV or MP3 **Weight:** 4 Oz, 2 Alkaline AA , **Battery Life:** 4 hours

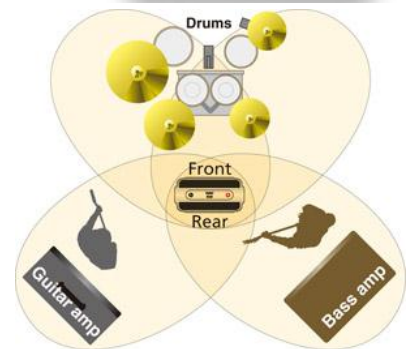
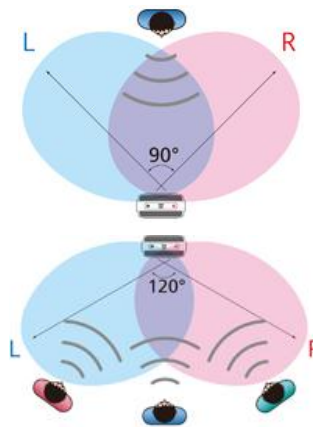
Built-in USB 2.0 port for data storage

Record from the front of the H2 in a 90° pickup pattern or the rear of the H2 in a 120° pickup pattern

Record in a 360° pickup pattern at up to 48 kHz/24-bit resolution which will allow you to convert your recordings to 5.1 Surround.

W-XY mic patterns with 4 mic capsules and signal processing allows Front 90 cardioid, Rear 120 cardioid and 360 polar patterns (See pictures)

Record 360 sound as 2ch data or 4ch data simultaneously



## ZOOM H2N – Handy Portable Stereo Recorder

ATUS: **DAR 401-410**

Records in Wave or MP3.

One click recording, extremely simple to set up and use.

Very portable and well designed.



Powered by 2 AAs or USB

Able to record using multiple microphones to optimize sound collection & clarity. (See above)

Default: 2 Gb Card (37 Hours minimum at 96 KbPS mp3).

Max recording quality: 24-Bit 96kHz Wave.

Large bright LCD Screen for easy viewing

Unlike the Zoom H2, this recorder has a miniature speaker for playback.

Inputs: Line in (1/8" Mini Stereo), Remote, Line Out, USB, (NO AC)

Navigate using simple 3 directional pad on right side.

ATUS: **DAR 501-510**

**Summary:** Ideal for recording interviews, lectures, rehearsals, meetings, and more, this palm-sized unit packs the ability to record up to 4 channels of audio at greater than CD quality.

- True X/Y Stereo Mics
- Selectable Recording Patterns, Records up to 24-bit/96kHz
- Records to SD/SDHC
- XLR/TRS Combo Inputs
- Built-In Speaker, Backlit LCD Display
- Uses AA Batteries – Can be powered by USB or AC Storage

The H4n comes complete with a 16GB SD card, wind screen, mic clip adapter, AC adapter, USB cable, reomote, and protective case



# 3(D1) Audio Recording Microphones

## Handheld cardioid microphones

ATUS: **AMU16-42**



### Shure SM58 (AMU 16, 33, 35, 36)

Frequency response tailored for vocals, with brightened mid range and bass roll off to control proximity effect. Uniform cardioid pickup pattern isolates the main sound source. Pneumatic shock-mount system cuts down handling noise.

### Shure PG57 (AMU 38, 40)

Tuned specifically for instrument applications. Cardioids polar pattern picks up the most sound from in front of the microphone and some sound from the sides. Less susceptible to feedback in high volume settings. Dynamic cartridge has a simple, rugged coil. Handles extreme volume levels without distortion. Internal shock mount for reduced handling noise

### Shure PG58 (AMU 37)

Shure - Dynamic - Unidirectional - 10.5 ounce - Mono

Tailored frequency response is smooth and extended. Tuned specifically for vocal applications. Cardioid polar pattern picks up the most sound from in front of the microphone and some sound from the sides. Less susceptible to feedback in high volume settings. Dynamic cartridge has a simple, rugged coil. Handles extreme volume levels without distortion. Integral "pop" filter reduces explosive breath sounds and wind noise. A rugged mic tuned to accentuate the clarity of lead and back-up vocals

### Audio Technica 75D - 1985 Unidirectional Microphone **AMU 30**

## Lavalier microphones (clips to Lapel)

### Wireless Lapel Microphone Azden WMS-PRO Wireless Microphone System

ATUS: **CMW101-115, CMW301-312, AMW203-205**

LEDs on transmitter and receiver confirm system status  
Ear-phone included to monitor sound being recorded  
and receiver plugs into cameras external microphone jack  
Both units use 9 volt battery

System includes:

WR-PRO receiver , WM-PRO belt-pack transmitter

Lavalier electrets condenser microphone

Hand-held electrets condenser microphone (only CMW301-CMW312)



### Wired Lapel Audio-Technica ATR-35S Omni-Directional Mic.

ATUS: **AML71-77, AML80**

High-quality omni-directional condenser

Lavaliere microphone with on/off switch

Great for use with video, aerobics, dance and sports instructors

Miniature design with permanently attached 20' cable and 3.5mm mini plug

Frequency response: 50Hz-18 kHz

Includes tie clip, battery, windscreen and 1/4" adapter



## Wireless Microphone Systems

Sennheiser Diversity Receiver ew300/ ATUS: **AMW 401/ AMW503**

Sennheiser Diversity Receiver BFR 1051 HiDyn Plus/ ATUS: **AMW 110**

Sennheiser Diversity Receiver ew100/ ATUS: **AMW506, Lapel 1 - 4**

Audio Technica UHF Synthesized Diversity Receiver ATW-R2100/ ATUS: **AMW 402,3,4**

Performance Gear Wireless PGX4/ **AMW 405 (Newer)**

**Note: Receiver needs AC power.**



**Summary:** This equipment allows you to connect wireless microphones to existing sound systems. These systems are designed to be connected via XLR or 1/4 audio cables. (See Section H. Sound Systems for ATUS sound systems). They come with either wireless handheld microphones, lapel mics or both.

# USB microphones

## Condenser Microphone - Samson CO1U

ATUS: **USBMIC1, 2, 4**(Different but very similar model)

19mm internal shock mounted diaphragm with a cardioid pick up pattern

Compatible with any computer based Digital Audio Workstation.

The extremely detailed sound reproduction makes it ideal for recording vocals, acoustic instruments and just about any other sound source.

High Quality AD converter with 16 Bit, 48K sampling rate.

## Snowflake Microhpne - Blue Microphones

ATUS: **USBMIC 3**

Unique design fits on your desktop or laptop, extremely portable

Perfect for podcasting, voice recognition software, movie narration, music

Compatible with Mac and PC; plug-and-play, requires no additional drivers

## USB Speakerphone

ATUS: **USBSPKPHO 1-2**

360-degree room coverage , Minimizes background noise

Full duplex USB speakerphone, conference quality audio

Integrated mute and volume controls, headphone jack

## Blue “Yeti” USB Mic

ATUS: **USBMIC 10-11**

- Tri-capsule array - 3 condenser capsules can record almost any situation
- Multiple pattern selection - cardioid, bidirectional, omnidirectional & stereo
- Gain control, mute button, zero-latency headphone output
- Perfect for vocals, musical instruments, podcasting, voiceovers, interviews, field recordings, conference calls
- Plug 'n play - Mac and PC compatible

## Audio-technica AT2020 – Cardioid Condenser Mic

ATUS: **USBMIC5, 6, 7**

- The price/performance standard in side-address studio condenser microphone technology
- Custom-engineered low-mass diaphragm provides extended frequency response and superior transient response
- High SPL handling and wide dynamic range provide unmatched versatility
- Ideal for project/home-studio

## USB mic adapters

ATUS: **USB MICAD 1, 2, 3** - Allow for conversion between XLR and USB (and 1/8” jack on USB MICAD 1)



## Shotgun microphones & boom poles

### Audio-Technica AT815b Shotgun Microphone

ATUS: **AMG1-AMG7, AMG10-AMG12**

Designed for professional recording, broadcasting and film/TV/video production. Provides the narrow acceptance angle desirable for long-distance sound pickup.

Delivers excellent sound rejection from the sides and rear of mic. Switchable low-frequency roll-off. Operates on battery or phantom power. The roll-off position reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically coupled vibrations.

### Sennheiser ME66 Short Shotgun Capsule Head for K6 Series

ATUS: **AMG 8, 9**

Super-cardioid/lobar pick-up pattern  
Highly directional  
Low inherent self-noise  
High sensitivity  
Especially suitable for reporting, film and broadcast location applications and for picking up quiet signals in noisy or acoustically live environments as it discriminates against sound not emanating from the main pick-up direction.  
Matte black, anodized, scratch-resistant finish.



### Extendable Microphone Booms

ATUS: **Boom101-110; Boom102, 111, 112, 113 have built in XLR Cable**

It is useful for extending Microphones above subjects during recording; up to 12 ft extension.



## Miscellaneous microphones

### Tabletop Conference Microphone

ATUS: **AMT 2, 3, 4**

Optimus Omnidirectional Boundary Mic/ ATUS: **AMT3**

PZM6D/ ATUS: **AMT4**

Crown Sound Grabber 2/ ATUS: **AMT5, 6**



### Audio-technica PRO 42 - Miniature Cardioid Condenser Boundary Microphone

ATUS: **AMT 20-22**

The PRO 42 brings crisp, intelligible audio reproduction to the podium, stage, conference table and beyond. With a wide-range condenser element and low-mass diaphragm for superior performance, the microphone is equipped with self-contained electronics, eliminating the need for external power modules.

- Very low-profile design for minimum visibility
- Wide-range condenser element with low-mass diaphragm for superior performance
- Uniform polar pattern for maximum rejection of unwanted sounds
- Rugged design and construction
- **25' (7.6 m) cable permanently attached between microphone and XLRM-type connector**



### Audio-technica PRO 24-CM - Fits on Camera Mic Shoe

ATUS: **SHOEMIC-1, 2,3,4**

Pro-level stereo reproduction for video camera mounting.

#### True X/Y Stereo Capturing

The Pro-24CM features two capsules mounted in an X/Y position for true spatial impact and realism of a live sound field.

#### LR44 or Plug-in Power Capable

Battery-free operation when used with recording devices that provide plug-in power at the mic input.

#### Compact Design

Compact, lightweight design is perfect for camera-mount use.



# Audio accessories

## Microphone Holders:

ATUS: HSM1, 2



Handheld mount for shotgun mic

## Other Microphones:

Computer Headsets



Lapel Headsets



## Mic Stands:

Tabletop



Full Size



# (E) Computers

## Windows (Dell) PC Computers

**Dell Latitude E6420** Windows 7

ATUS: WWD

### TO LOG IN – JUST press “ENTER KEY”



#### Specs:

- 14' Full HD LED Screen (1600x900)
- Intel 2<sup>nd</sup> Gen Dual Core i5-2520M,
- 2.50Ghz 1066MHZ 3M L2 Cache
- Windows 7 Professional 64 Bit, 8x DVD
- 320 GB Hard Drive
- VGA Output
- 4GB DDR3
- Intel HD Graphics 3000
- Screen size: 14.1 Active Matrix Display
- Internal wireless card - This allows you to connect to any wireless hotspot.
- Battery 4-6 Hours
- Additional batteries available

#### Software:

- All standard Windows 7 Programs
- Adobe Reader 9
- Express Scribe
- Microsoft Office 2007 (Word, Powerpoint, Excel, Publisher, Outlook, Access, Infopath)
- Internet Explorer / Mozilla Firefox / Chrome
- iTunes
- VLC Media Player
- PowerDVD
- Roxio
- Google Earth
- Interwrite Software for Classroom Clickers



\* Our computers are updated quarterly and are often changed by students themselves so this list may not accurately reflect programs on individual computers. If you have questions regarding a specific program please contact us and we will do our best to accommodate your needs.

## Apple Macbook

ATUS: **MAC300-320** *Macbook1,1 - Model # A1181*

2.0 GHz Intel "Core Duo" processor (T2500)

Processor Speed: 2 GHz      Memory: 2 GB

Bus Speed: 667 MHz

System Version: MAC OS X 10.5.8 (9L30)

512 MB of 667 MHz DDR2 SDRAM (PC2-5300)

60.0 GB Serial ATA (5400 RPM) hard drive with  
4X slot-loading double layer *read* (single layer write)

DVD/CD-RW "SuperDrive"

Intel GMA 950 integrated graphics processor with 64  
MB of DDR2 SDRAM shared with main memory

13.3" widescreen TFT active-matrix "glossy" display  
(1280x800 native resolution)

AirPort Extreme (802.11g)      Bluetooth 2.0+EDR      FireWire "400" port      2x USB 2.0

Optical digital audio in/out      Video out capabilities (mini-DVI)      Built-in iSight video camera



### Software:

Adobe Acrobat	Adobe Reader 9	Clicker 5	GarageBand	Inspiration 9
iDVD	iMovie	iPhoti	iWeb	Microsoft Office 2008
Windows Media Player		Skype	Studio8	+ Many others

### Internet Apps:

Fetch	Firefox	Opera	Safari	Media Players:
iTunes	VLC Media Player	Windows Media Player		Real Player
DVD Player	Quicktime Player	Google Chrome		

### \*Optional Mac Hubs Available

## Apple Macbook Pro

ATUS: **MACPRO1-20** (model A1278)



### See Software and Internet apps above.

Intel Core 2 Duo Processor 2.4 GHz

13.3 Inch Screen (1280 x 800 Resolution)

Intel HD Graphics 3000

8 Lbs.      4GB DDR2 Ram      250GB Hard Drive

Back Lit Keyboard

### Inputs:

Firewire 900, Lightning Port, x2 USB 2.0, SD Card,  
Headphones

## Apple Ipod Touch



ATUS: **x6** - No ATUS name, use Barcode

4<sup>th</sup> Generation – 3.56 oz.

32 Gb storage, 256 Ram

Holds up to 7,000 songs, 40,000 photos

3.5" 960x640 (326 ppi) Retina Display

Capable of recording in 720p

Estimated 40 hours of music playback, 7 hours for video

Camera 0.7 Megapixels

**Numerous preinstalled apps for:**

Storage, Photography, Productivity, Audio, Video, Drawing etc.

## Misc. Computer Accessories

### **Powerpoint Clicker - SMK-Link RemotePoint Navigator 2.4 (VP4150)**

Polished metal, icon-studded control keys support Slide Forward, Slide Back and Slide Hide functions, and a laser pointer.

Installation: Just plug in the USB receiver and go

Navigator's 50 foot RF wireless range means that no matter where you're standing or which way you're facing in the room, your slides will advance on cue every time

50 foot range

PowerPoint ready

No software required



### **Other Accessories:**

Mouse

Remote Mouse

Scanner

Thumb Drives 4g or 8g (Lexar or Kingston brand)

Flash Card Readers

Read many different types of Cards including:

MMCMobile, SD, SDHC, MMC, MMCplus, RS-MMC; MiniSD, miniSDHC; microSD, microSDHC;

MMCmicro; CF Type I and II, Microdrive; MemoryStick, Memory Stick Pro, Memory Stick Duo, Memory Stick Pro Duo; MemoryStick Micro (M2)



# (F) Media Storage

## Lacie Hard Drives

### LaCie 80GB USB 2.0 Desktop External Hard Drive

ATUS: **VSD30-38**

80GB

1x USB

1x FW400 (6-Pin Firewire)

Available with high-speed USB interface, the LaCie Hard Drive offers fast data transfer rates (up to 400 Mbps) that are required for substantial jobs like rendering 2-D/3-D images, downloading digital photos, saving MP3s or transferring home videos from a camcorder.



### LaCie LTD. 160GB External Hard Drive d2 EXTREME FW800

ATUS: **VSD1,2,4,7,11,13,15,16,17,18,20,21,23,24,28,29,40-48**

(Same as Below)

### LaCie D2 160GB External Hard Drive USB 2.0

FWIRE/8 7200RPM 8MB

ATUS: **VSD51-54**

USB Port

FW 400 (6-pin Firewire)

2x FW 800 (9-pin Firewire)

Compatible with Mac or PC (depending on formatting)



### **LaCie Rugged All-Terrain 500 GB External Hard Drive**

ATUS: EXHD1-10, EXHD20-80

USB 2.0

FireWire 400 (6-pin firewire)

1 FireWire 800 (9-pin firewire)

Bus-powered so no bulky power adapter required

Measures 3.5 x 1.0 x 5.7 inches

Weight: .5 lbs

Mac or Windows



## **Western Digital**

### **Western Digital My Book Studio II - 2 TB Desktop External Hard Drive**

ATUS: DNCDRV 1-10 EXHDL 1-10

USB 2.0/FireWire 800/400/eSATA

(2 x 1 TB) Drives (Dual Drive)

Lightning-fast FireWire 800 combined with RAID 0 yields the speed you need for smooth video editing, rendering complex 3D objects or special effects

WD's GreenPower drives; this system uses about 30% less energy than standard systems and runs quietly because it doesn't need a fan

2TB = 2000GB Hard Drive Capacity

Pre-configured to RAID 0 (Striped)

Dimensions: 8.8 x 7.8 x 8.8 inches

Weight: 6 pounds

PC or Mac Compatible



**Also See: Firestore Hard Drives under Camera Accessories**

# (G) Lighting

## Light Kits

### 5 Types of Lights: Lowell Brand

**Omni Light:** The wide focusing range of the omni-light makes it a flexible key or back-light. Excellent general purpose light. Kits contain umbrellas and stands.



**Tota Light:** Compact, rugged, and versatile, the Tota-light can be used with its umbrella as a soft key, fill, or back-light. With its adjustable reflectors, it can be a smooth and even back-ground light; or point it toward the ceiling to raise the ambient (base) light level of a room. Kits contain umbrellas and stands.



**Flood Lamp:** Strong light source designed for video and photo lighting. Kits contain reflectors and stands.



**Rifa softbox:** This softbox opens like an umbrella. This softbox is compact, lightweight, and self-contained. A woven glass fabric, heat-resistant 21 x 21" (53 x 53 cm) front diffuser provides sufficient illumination with soft shadows.



**Lowel Pro light:** With its high intensity Reflector & Prismatic Glass, the tiny focusable Pro-light is more efficient than a mini-fresnel of equal wattage. It gives an exquisite even light, with fresnel-like shadow quality, evenly dispersed flood, and a uniform spot with significant barndoor cut. Used with today's more light sensitive digital cameras



### Definitions:

Key Light: Direct/Dominant light on subject

Backlight: Light that hits a person from almost behind; does not hit much of subjects face

Diffusion: Re-directing or scattering light

Fill: Light that fills in shadows not hit by Key light.

## Light Kit Contents

**LK2:** 2 Omni Lights

**LK5:** 3 Tota Lights

**LK6:** 2 Tota Lights

**LK201:** 2 Large Flood Lamps

**LK202, 203, 204:** 2 Small Flood Lamps

**LK301, 302:** 2x Circular Omni, 2x Tota, 1x Rifa softbox, 1x Pro light (6 Lights, Heavy)

**LK303-308** – 1x Rifa Softbox, 1 Pro Light, 1 Omni and 1 Tota (4 Lights, heavy)

**LK401-404:** 3 Large Flood Lamps

# (H) Projection/Display/Video Players

## Epson LCD Projectors

Small Lightweight & Portable

**Summary:** These projectors are versatile in that they are convenient & simple to use. They all have standard inputs to project images/videos from a variety of different mediums.

**ATUS: MPE1, MPE02-05, LCD1-6**

**Inputs/Compatibility:** HDTV (720p), Standard (480e), Component, S-Video, RCA (Computers).  
No HDMI

**Throw Distance:** 5-30 Ft.

**Image Size:** 30-300 Inches

**Speakers:** 5-10 W Mono

**Display:** 3 LCD

**Native:** 1024x768 (1200x800 for LCD3-6) **Weight:** 6 Pounds

### EPSON PowerLite 82C (Model # EMP-82)

**ATUS: MPE1, MPE02-05**



### EPSON PowerLite 84 (Model # H294)

**ATUS: LCD1-3**



*\*Projector has a dedicated microphone input, allowing teachers to amplify their voice using the internal speaker to ensure all students can hear.*

### EPSON PowerLite 826W (Model # H296A)

**ATUS: LCD 4-6**

**Displays widescreen image (16x10)**

**Weight:** 7.0 lbs



# High Definition Projectors

## **EPSON PowerLite Pro G5450WU** – (permission required for Checkout) (Model # H346)A

ATUS: LCDHD-1, 2 , 3

Weight: 15 lbs.

Size: (inches, D x W x H) 18.5 x 12.3 x 5.3

Keystone Correction: Vertical  $\pm 30^\circ$ ,

Horizontal  $\pm 20^\circ$  (standard lens)

Screen Size: 50-inch to 300-inch

Projection Distance: 100-inch screen:

2.76–4.97m (standard lens)

Speaker Output: 1 x 7 watt

Connectivity:

Input Video: 1x RCA, 1x S-Video, 1x component (via D-sub 15-pin),

1x HDMI, 1x DVI-D, 1x 5-BNC, 1x 1-BNC

Input Computer: 1x D-sub 15-pin (RGB), 1x 5-BNC, 1x DVI-D

Input Digital: 1x HDMI, 1x DVI-D

Input Audio: 3x Stereo mini-jack, 1x RCA, 1x

**HDMI**

Input: Control 1x RJ-45, 1 RS-232C

Wireless Connection 1x optional Wireless LAN Unit (802.11 a/b/g), 1x optional Quick Wireless Connection USB Key

Output Computer 1x D-sub 15-pin (RGB)

Output Audio 1x Stereo mini-jack

Display:

Type: 0.76" with MLA

(C<sup>2</sup>Fine) 3 LCDn

Resolution: WUXGA (1920 x 1200) Widescreen

Aspect Ratio: 16:10 (Native), 4:3, 16:9

Comments/ Special Features:

Easy MP Network & Control via Wired or Wireless LAN

EasyMP Network Projection, including Multi PC Projection and message broadcasting functions)



## Other LCD Projectors

**Summary:** These projectors are a bit older than the previous LCD projectors. They are a bit heavier, however much of the functionality and display is the same.

**ATUS:** MPF01/02, MPD 6/9/10, 11/13, MPS-01

**Inputs/Compatibility:** HDTV (720p), Standard (480e), Component, S-Video, RCA (Computers).  
No HDMI

**Throw Distance:** 5-30 Ft.  
**Display:** 3 LCD

**Image Size:** 30-300 Inches  
**Native:** 1024x68 (4x3)

**Speakers:** 1-5 W  
**Weight:** 6-14 Pounds

### EPSON PowerLite 821P – For larger rooms

*Model # EMP-821*

**ATUS:** MPF01, 02



### EPSON PowerLite 7200

*Model # ELP 7200*

**ATUS:** MPD 6, 9, 10



### EPSON PowerLite 7250

*Model # ELP 7250*

**ATUS:** 11, 13



### Sanyo PLC-XU41

*Model # PLC-XU41*

**ATUS:** MPS-01

## Residence Hall Projectors

**Summary:** This projector is reserved for checkout by Residence Hall staff only. (Student RAs okay)

### Panasonic PT-LM1U Projector

Model # PT-LM1U

ATUS: **RES 102**

Weight: 3.5 lbs

Size (in.) (HxWxD) : 2.3x10.1x8.2

Throw Dist (feet): 7.8 - 30.5

Image Size (in.): 60.0 - 275.0

Digital Keystone: Vertical

Speakers: 1.0 W Mono

Compatibility:

HDTV: 1080i, 720p, 525i

EDTV/480p: Yes

SDTV/480i: Yes

Component Video: Yes

Video: Yes

Digital Input: No

Computers: Yes

Display:

Type: 0.6" 3 LCD

Native: 800x600 Pixels

Maximum: 1600x1200

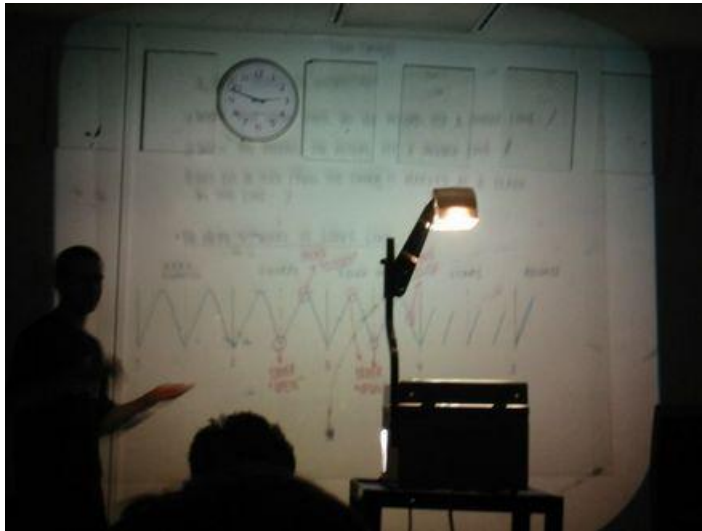
Pixels

Aspect Ratio: 4:3 (SVGA)



# Older Display Equipment

## Overhead Projector Aka Transparency Projector



## 35mm Slide Projector (w/ remote control)



## Opaque Projector



## 16mm or 8mm Projector



## Portable Screens

Portable Screens for presentations using a



Projector

Sizes range from 3 ft. (Tabletop) to 10 ft.

Different Styles



Some may be adjusted from standard to widescreen:



4:3 format



16:9 format

# Sony DVD Recorder

## **Sony VRD-MC1** DVDirect External USB 2.0 Multi-Function 16x DVD Recorder

ATUS: **DVDR 101-103**

Records video and digital stills from camcorders, digital cameras and audio-visual sources to DVD without computer

4-pin i.LINK (IEEE1394) port for a camcorder connection, and composite video, S-video and L/R audio connections for audio-video recording

A memory stick duo slot and a multi-card slot that accepts a memory stick, SD memory cards, xD picture cards, and CompactFlash cards are included for your digital stills.

Prints images directly to PictBridge compatible printers

Automatic menu and title/chapter creation

Includes Nero software suite for managing and editing of digital imagery



## **Sony VRDMC5** DVDirect DVD Recorder

ATUS: **DVDR 104**

Record video to DVD from DV or analog video source – Playable in most home DVD players

Record AVCHD video from Sony HDD/MemoryStick Handycam Camcorder to DVD playable in most Blu-ray Disc™ players

Backup digital photos to DVD or create photo slideshow on DVD from Memory card or Sony HDD/Memory Stick Handycam camcorder via USB

Playback/viewing on built in 2.5" LCD display, only discs created by

Incorporates memory card slots for the 5 popular camera memory card types and will directly record images from the memory card to DVD as a playable slideshow or just for photo storage.

Full support for 4:3 full screen or 16:9 wide screen video and Dolby® Digital 5.1 surround sound.

# DVD/VHS/Blu-Ray Players

## DVD/VHS Player

ATUS: **DHS 101**

## DVD Players DVD-R Playback

ATUS: **DVD102, 104, 105, DVD RegFree**

(DVD Reg Free is Region free)

## DVD/Blu-Ray Players

ATUS: **DVDBLU1, 2**

Ports: USB, Ethernet, HDMI, Blu-Ray Audio / Video Output, Coaxial, Digital Out

## External Drive/Burners

### CD External Drive / Burner

ATUS: **CDR 101**



### DVD External Drive / Burner

ATUS: **DVDUSB 1, DVDUSB 2**

Plays CDs or DVDs



### Blu-Ray External Drive / Burner - LG BH08LS20 Super Multi Blue - Disk drive - BD-RE - 8x/2x/8x - Serial ATA - internal - 5.25" LightScribe

ATUS: **DVDBLUUSB-1**

LG BH08LS20 Blu-ray 8x Burner 16x DVD RW DL SATA Drive General Features  
LightScribe Direct disc labeling 8x write speed (BD-R SL) 4x write speed (BD-R DL)  
2x write speed (BD-RE SL/DL) 8x read speed (BD-ROM) 16x write speed (DVD R)  
8x write speed (DVD+RW) 6x write speed (DVD-RW) 4x write speed (DVD R DL)  
5x write speed (DVD-RAM)

# Document Cameras

## **Wolf Vision VZ-7D Portable 1CCD Video Visualizer**

ATUS: **VDC 101**

18 x optical zoom with a digital x 4 zoom extension, which can be switched on if required.  
An Infrared remote control featuring: Manual focus, Auto focus on/off, Manual iris, Image on/off switch, 3 user programmable Presets and Laser Pointer

User programmable setup: Experienced users can alter the standard settings of the unit according to their own requirements

Easy to Operate: Only 5 Buttons on the Unit

A built-in video camera offers a resolution of 470

TV-lines and the top picture quality that can be achieved with PAL or NTSC video technology

Produces a very strong, clear and stable picture when the visualizer is used as a document camera for videoconferencing systems

other objects

Easy Folding System sets up in seconds



## **Lumens DC ladybug**

ATUS: **DOCCAM 2**



SXGA Resolution and 5x Optical Zoom

Enlarged Shooting Area of 420 mm x 315 mm  
(17" x 12"): A3

Internal Memory plus SD Card

Enhanced Security and Auto Backup

Integration with Interactive Whiteboards

Standalone Video Recording

The DC166 camera head and lamp are mounted on adjustable gooseneck arms to examine objects from any angle.

## **Small TV**

ATUS: **VMB 76**

**There are media closets around campus**

# (I) Sound Systems

## Public Address (PA) Systems (Portable Standalone)

### Yamaha Stage PAS 400s

ATUS: PAM1, PAM 2 (PA stands available)

**Summary:** These PA set comes with 2 Speakers, a built in mixer (amp), and speaker stands. The STAGEPAS 400i, all-in-one sound solutions that are extremely portable and easy to set up, allowing users to instantly add high quality sound reinforcement to virtually any environment.

**Mixer:** Equipped with 10 channels or 8 channels respectively, the 400i offers versatile connectivity, comprehensive channel functions, and seamless expandability that meet the growing demands of a wider range of applications and environments.

**Power:** By combining new high-efficiency amplifiers, newly designed speakers and high performance DSP, the new STAGEPAS delivers a significant increase in power output, with substantial improvements in sound quality and reliability.

**Weight:** 20 Lbs (each)

**Max SPL:** 125 dB SPRL/speaker

**Frequency Range:** 55Hz – 20 Khz

**Mixer Channels:** 8 4 Mono mic/lin + 4 mono /2 steroline

**USB Audio In** 1/8 Audio In (Mini)

**Phantom Power** +30v

**Built in Amplifier:** 400W (200W each)



## **Liberty MPB4500**

ATUS: PAE 1, PAE 2

The system comes with wireless handheld and lapel microphones.

Project/Music Switch. "Project" emphasizes voice for better clarity; "Music" gives higher fidelity.

Accommodates multiple mics, plus CD/Tape input.

50 watt amplifier

Two XLR balanced phantom-powered mic inputs,  
1/4" line input, line output, treble and bass controls

12 volt DC output and 1/4" speaker output.

Dimensions: 13x22.5x10" (WxHxD)

Weight: Approximately 44 lbs



## **Anchor MPA-5000, Liberty Xtreme Powered Speaker**

ATUS: PAD 301-303

Anchor MPA-5000 Liberty Xtreme, Powered Audio Speaker.

A single PA unit switchable to either an efficient voice-projecting system or a full-range music quality system. Features:

Project/Music Button, Balanced, switchable mic/line input (accepts any microphone or any line level source), Unbalanced line input accepts any line level audio source, AC accessory outlet powers auxiliary components or systems, Balanced line out supplies line level signal to additional systems.

Line Input: 1/4"-phone, Hi-Z, unbalanced

Mic Input: XLR female, Lo-Z, 15 VDC phantom power

Balanced Input: XLR female, switchable mic/line level

XLR input allows use of both line level or microphone source, with or without phantom power

15 VDC phantom power (switchable)

Line Output (post fader): XLR male, 600, active balanced



## **Liberty Platinum**

ATUS: PAE 3

The system comes with wireless handheld and lapel microphones.

The Liberty Platinum is the fourth generation in the twenty year history of the Liberty

Reach Crowds of 2,000 +

AC Mode 125 Watts - DC Mode 100 Watts.

Selectable Channels

AC Mode = 125W / DC Mode = 100W

Single or Dual Built-in UHF Wireless w/ 16 User

Selectable Channels

Built-In MP3 Player Accepts SD Card, USB Flash Drive or 3.5mm input for iPod

USB Port for Charging MP3/iPod®

“Voice Over” Music Ducking Feature

Two Universal Mic Input Jacks

Recessed Back Panel Protects Knobs and Ports

True AC/DC - 110/220V Power Supply

Ceramic Compression Driver

10” Neodymium Woofer

Proprietary Class D Amplifier

User Replaceable Batteries, Charging LED Bar Indicator, Operates 6-8 hrs on a Single Charge

Speaker Out to Power Companion Speaker



## **Pyle Pro Pro Audio PA system PWMA-1080i**

ATUS: PAG 1

Features echo, bass & treble controls.

**Rf, rechargeable, low battery & power led indicator.**

**Handheld wireless microphone** with 3-position power switch.

Operation range: 100 ft.

Unit battery life: 5 hours. Microphone battery life: 45 hours

Docking system suitable for ipod nano & ipod classic.

Unit powered by internal, rechargeable battery pack.

Vhf wireless microphone with fcc certificate.

Ported enclosure for increased bass response.

2 microphone, 1 guitar & 1 audio.25inch inputs.

Telescoping handle & caster wheels.

One 6.35mm male to 3.5mm stereo female adapter.

Weight: 48 pounds



## **SAMSON auro D415**

ATUS: PAD 5

### **This is a powered speaker.**

Compact, lightweight 2-way active speaker system  
D415A: 15-inch extended range low frequency driver  
1.34-inch (34mm) compression driver with 1-inch exit  
400 watts of output power  
XLR mic input

Delivering 400 watts of output power, Auro D415 features a 15-inch extended low frequency driver and accompanying 1.34-inch compression driver. Immersive, articulate bass and sweet, lucid highs create well-balanced and expressive audio suitable for any situation when pro-quality sound is a must. Plus, our exclusive Optimax processing ensures the Auro D415 will operate at high volume levels without sacrificing low end. It's convenient 1/4-inch line input and XLR mic input, along with volume control and 2-band equalizer, combine professional capabilities with total ease of use. The speaker also features a 1-3/8-inch pole mount receptacle and dual-angle floor monitor positioning options for flexible setup. One feature you'll love about the Auro D415 is its conveniently lightweight, yet resilient design. The unit provides two oversized ergonomic carry handles, making transportation a breeze, while the solid polypropylene construction ensures roadworthy durability. Auro D415 is ideal for sound professionals and performers seeking to bridge the gap between portable and fixed installation applications.



## **EV Tapco 100s PA speaker (older) Pair**

Item specification: PA Speakers.

Electro-Voice, Inc.

EV Tapco 100S

Features:

Color: Black.

Two-Way Constant Directivity Speaker System.

Nominal impedance: 8 Ohms.

High frequency level control.

Power Capacity: 100W.

Built-in carry handle.

12" Woofer.

Directivity horn.

Overall: 24" x 16" x 8"



**This speaker is not powered and needs an AMP**

## Small PA Systems

### Anchor AN-1000X Two-Way Powered Speaker

ATUS: PAB 101-105

This speaker will reach crowds of 400+ with up to 103dB of clear sound. It features bass and treble controls and a 50-watt sound system with response from 65Hz-20kHz. Its 2-way speaker system combines a 4.5" woofer and a dome tweeter.

The speaker can be rack or wall mounted. Simple line-in, line-out connections allow easy daisy-chaining for expanded coverage, or its output can drive a companion, **non-powered speaker**.



### TeachLogic Soundlearning Presenter Sound System

ATUS: PAF 1, 2

High Quality Small Portable PA system

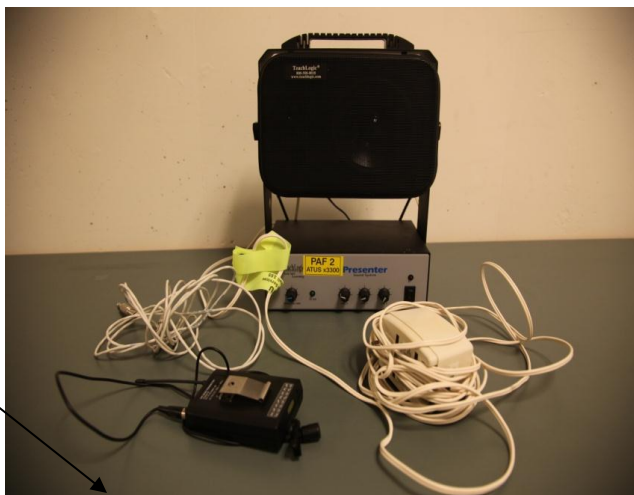
Speaker Outputs

Line out

Line in

XLR Mic In

**Comes with a Lapel microphone**



### Basic Computer Speakers (AC powered)

ATUS: COMPSPK1,2,3



## Conference Phones

### **Polycom SoundStation EX with Mics**

ATUS: TLC101

Full-duplex conference phone with 2 external microphones  
External microphones (optional) double coverage for medium to large rooms  
Integrated keypad for phone dialing with mute button, flash  
3 microphones, digitally tuned speaker provide 360-degree coverage  
Echo cancellation/noise suppression ensure high sound quality  
**This polycom requires an analog line**



### **Polycom SoundStation2 Expandable Conference Phone**

ATUS: CONFPHO1

Acoustic clarity full duplex for natural, simultaneous 2-way conversation  
3 cardioid microphones with intelligent mic mixing and 10-foot pickup range  
Adjustable volume with dynamic noise reduction  
Caller ID, graphical backlit LCD, user selectable ring tones  
12-key telephone keypad with mute, volume up/down keys  
**This polycom can be used with both analog and digital.**  
**If included adaptor is used.**



## **Audio Mixers (AC Powered)**

## **Behringer XENYX 802**

ATUS: MIX4CH1, MIX4CH2, MIX4CH3

**Summary:** Weighing in at just 2.2 pounds, the XENYX 802 is the portable, practical way to turn a small performance with multiple vocalists into a sonic gem. Choirs, folk duos, coffee shops and karaoke lounges agree the XENYX 802 packs superior sound into small places.

The 8-input, 2-bus XENYX 802 has two XENYX mic preamps with +48 V phantom power, making it possible to use two dynamic or condenser microphones.



- Premium ultra-low noise, high headroom analog mixer
- 2 state-of-the-art XENYX Mic Preamps comparable to stand-alone boutique preamps
- Neo-classic "British" 3-band EQs for warm and musical sound
- 1 post fader FX send per channel for external FX devices
- 1 stereo aux return for FX applications or as separate stereo input
- Main mix outputs plus separate control room, phones and stereo CD/tape outputs
- CD/tape inputs assignable to main mix or control room/phones outputs

**The mixer is not powered and requires an amplifier**

## **Shure SCM268 4-Channel microphone mixer**

ATUS: MIX 101

- Five unbalanced aux level inputs (Phono connectors)
- LED peak output meter
- One unbalanced aux level output (Phono connector)
- IEC power cord connector
- 12V phantom power for condenser microphones
- Built-in low cut filters on mic inputs
- Unit fits into a half-rack space and includes all the necessary rack mounting hardware.

**The mixer is not powered and requires an amplifier.**



## **Soundcraft RW5734 EPM6 – 6-Channel Multi-Purpose Mixer**

ATUS: MIX 202

2 configurable auxiliary buses  
XLR-type and 1/4" metal jack connector sockets  
RCA phono stereo playback inputs and record outputs  
3-band EQ with a swept mid on mono inputs  
2-band EQ on stereo inputs  
TRS insert sockets and inserts on all mono inputs and mix output  
Ten-segment LED output metering  
Intuitive and comprehensive solo system  
Headphone output

**Mixer not powered and needs an amplifier.**



## **MACKIE PPM 808s Stereo 8-Channel Powered Mixer**

ATUS: MIX301

Full featured 8-channel 1200 watt stereo powered mixer

with onboard EMAC™ 32-bit digital stereo effects processor

Two 600-watt FR Series High-Current power amps

Power amps switchable as stereo Mains or Mains + Monitor

8 mic/line channels with master phantom power

Two stereo line inputs (on channels 7 and 8)

1/4" and XLR connectors on each input

1/4" Inserts on channels 1-6

Two Aux Sends (MON and EFX)

Ingenious "Break" Switch

Active 3-band EQ on each channel

9-band, audiophile-quality graphic EQ on Main and Monitor outputs

**Mixer not powered and needs an amplifier.**

**If speakers are needed, use the EV Tapco speakers.**



# (J) Accessories & Misc. Equipment

## (J1) Camera Accessories

Car mount (**CMT101**)

Gel kit (**GEL101**) – 2 sets 6 colored gels and holders

Reflectors (**REF101, 102**)

Crane (**CRN101**) – In storage area/loading dock

Glide cam stabilizer (**GLC101**) (**GLC**)

Dolly for tripod (**TRD101**)

Clapper board

Field Monitor (**FMO 101, Field Monitor 2**)

Green Screens (**Greenscreen1-4**)

## Tripods

### Joby Gorillapod Flexible Tripod (Very Light Load)

ATUS: **GOR, T, TH**

Flexible tripod designed for digital cameras weighing up to 9.7 ounces (~.5 lb)

Fits into your purse, backpack, or jacket pocket

Innovative segmented leg design to ensure secure mounting

Standard universal 1/4-20 screw for attaching your camera to the tripod mount

Lets everyone get into self-timer shots

Weight: .5 lbs



### **Manfrotto 128 LP (Medium Load)**

ATUS: T

Smooth fluid movement

Ideal for lightweight video cameras

Adjustable for right or left handed usage



### **Manfrotto 501HDV (Medium-Heavy Load)**

ATUS: TH 1-10

Silky smooth panning.

Built in quick release system (removable boot)

First Manfrotto tripod with a 60mm bowl (an ideal match with the 701HDV professional video head).

Upper twin-leg and the one stage construction provide great rigidity. Mid-level fixed spreader and retractable spiked rubber feet included.

Comes in Bag



### **Manfrotto 3182 ProVideo Tripod w/ 519 Pro Video Head** (Heavy Load)

ATUS: TEX01,-02

Weight: 14.3 lbs

Independent pan lock

Independent tilt lock

Friction control wheel

Quick Release System:Yes

Max Operating Height: 67 in

Min Operating Height: 43 in

Max Supported Weight: 22 lbs



## Firestore

### **Firestore FS-4 100GB Pro Hard Drive Dv Disk Recorder** with Direct To Edit (dte)

ATUS: **VSD1**

The FireStore connects to the camera via a FireWire connection and allows you to record video directly to it, facilitating a tapeless workflow.

P2 MXF, Avid DV OMF, and Pinnacle AVI support

Retro-record modes including 10-second retro cache

Designed for DV or HDV hand-held camcorders

Small, rugged and shock-proof design

Scene marking for categorizing clips into pre-named folders



### **Canon FireStore FSC-HD100 Portable 100GB DTE Recorder** for the Canon XL-H1 & XH A1

ATUS: **VSD2, 3**

The FireStore FSC-HD100 100GB DTE Recorder for XL Series from Canon is a digital video recorder designed for use with the XL series of camcorders. The FireStore connects to the camera via a FireWire connection and allows you to record video directly to it, facilitating a tapeless workflow. The recorder supports the DV and HDV video formats, allowing you to record up to 7.5 hours of 1080i HD or DV25 footage.



## (J2) Transcribers

### **Sanyo TRC-8080** – Standard Cassette

ATUS: **ACT 102**

- Solenoid transport controls handheld mic, w/ slide remote
- Built-in speaker on mic 3 position foot control
- Phone recording capability w/ optional Gabber Grabber or SRD50.



### **OLYMPUS T1000** – Microcassette

ATUS: **ACT 100**

- Adjustable tape speed (15% ~ 30%)
- Adjustable auto backspace provides trouble-free transcription of basic in-office dictation.
- Easy-to-access controls including a convenient 3-pedal foot switch allow rapid transcription without taking your hands off the keyboard or your eyes off the screen.
- A dual-speaker headset lets you match dictation speed with typing speed.
- end-of-tape alarm,
- built-in speaker for group listening
- Tape counter



### **IN-USB-1 Infinty USB Foot Pedal** – Digital (Computer) Transcriber

ATUS: **PED 101, 201, 202**

- Ergonomic design of USB foot pedal allows you to rest your foot comfortably while you are dictating or transcribing.
- USB foot pedal includes a wide, central, sloping Play pedal. Large size of USB foot pedal enables you to easily move your foot from the Play to Fast Forward to Rewind keys during dictating or transcribing.
- The Infinity USB foot pedal works on most of the leading brands of dictation / transcription products.
- To use the foot pedal download software from the internet. **Express Scribe** is recommended.



## (J3) Misc. Equipment

### Mixers for camcorders

ATUS: **CAMMIX 1-7**

Mount under camera, able to mix 2 mics into one consumer grade mic input.  
XLR inputs mixes to one 3.5mm



### Phone Recorder - JK Audio THAT-2 Telephone Interface with XLR I/O

works with analog digital PBX & ISDN telephones

ATUS: **Phone Rec**

Tap into phone line to record conversations

Connect THAT-2 between your telephone and handset for quick access to audio in and out of the telephone.

The THAT-2 is used by radio stations to record and play sound bytes, and by TV and film sound crews to get IFB dialog over phone lines.

Unplug the handset coily cord from the base of your telephone and plug it directly into the THAT-2. Then, using the supplied cable, connect the THAT-2 back to the telephone.

RCA or XLR jacks

\* THAT-2 does not work with cordless or cell phones, or any telephone with a keypad in the handset.



### Audio -video extender

This device allows you to send composite video and stereo audio over CAT 5 (Ethernet) cable, allows up to 2000' cable lengths, note we can provide at this time only 100' lengths of the cat 5 cable.



## **Personal FM listening system**

The Motiva PFM System 330 from Williams Sound is a high-quality personal listening system ideal for a variety of applications.

The system includes a PFM T36 FM Transmitter a PFM R33 receiver a MIC 090 lavalier mic and an EAR 013 earphone. The T36 transmitter operates on a pair of AA batteries and uses FM radio technology to send audio to the receiver up to 150' away.

It has a mic input and a 3.5mm mini aux input allowing you to connect a microphone MP3 player CD player and other devices. It has 16 selectable channels for interference-free operation and a simple on/off/mute button.

The removable belt clip makes it easy to clip to your clothing or slip into a pocket. The R33 receiver also operates on a pair of AA batteries and has a slim pocket able design. It has a standard 3.5mm headphone jack to accept virtually any set of headphones. Has a simple on/off/volume control knob.



## **Audio interface/ converter mixer:**

### **MOTU Microbook**

The MicroBook turns your Mac or PC computer into a personal 4x2 recording studio with all the audio I/O and mixing you need for professional-quality recording and playback.

Plug in your mic, guitar and keyboard (or other instrument) and record up to four inputs simultaneously. You can even connect your iPod for rehearsing or sampling.

Mix your tracks with on-screen CueMix FX software and apply DSP-powered effects such as multi-band EQ and compression.

With professional analog stereo outputs, digital output, and stereo-mini output jacks for both headphones and desktop speakers, you can monitor your live audio and recorded tracks any way you like.

Edit and finalize your recording with the included AudioDesk software.



## Wireless Audio Video Transmitter

Transmit composite video and one channel of audio up to 400' in open space (line of sight)  
Note does not go through concrete walls well.

Input and outputs are RCA jacks.



## Cell Phone interface

Connect CellTap between the 2.5 mm earpiece jack of your cell phone and your earpiece or headset. Now connect a tape recorder or powered speakers to the 3.5 mm mini jack. This audio output contains a nice mix of both sides of the conversation. CellTap works with any wireless phone that accepts a third party headset or earpiece.

CellTap give you a quick and easy way to record telephone interviews directly to your portable recorder or even directly to your computer sound card to be uploaded to your podcast.

Group Listen - Simply connect a powered speaker to the audio output jack and you will have a new conferencing capability. Everyone in the room can hear your conversation, but only the person wearing the headset can talk to the distant party.

While this is not a speakerphone, in many cases it more suitable for sales presentations or contract talks.

CellTap must be used with an earpiece or headset. Your cell phone will not recognize CellTap on its own.



## Audio DI box

Mainly used to interface non balanced audio signals with professional sound gear, Think Performing Arts Center or Viking union sound systems and you want to connect your laptop audio output.

**\*\*Note Needs Phantom power from sound board.**

A Smart DI for Sound Cards, AV Post and Electronic Media





The Radial JPC is a two-channel hybrid direct box designed to address the demand for interfacing computer sound cards, consumer electronics and other gear to professional sound systems. The JPC features two active 48V phantom powered channels in a compact, rugged enclosure. The JPC combines an active drive circuit, for long cable runs, with transformer isolated inputs to eliminate hum and buzz caused by ground loops.

Inputs: - 1/8" or 3.5mm-1/4"TRS- RCA  
Outputs 2 XLR males

### **Hard drive DOCK for 2.5" drives**

Connect any internal type 2.5" or 3.5" SATA I/II hard drive to a USB connection, includes a power supply with molex type connection. USB 2.0. is great for rescuing data when your computer doesn't start.



### **Hard drive interface: IDE /SATA to USB**

Connect any internal type hard drive to a USB connection, includes a power supply with molex type connection. USB 2.0. is great for rescuing data when your computer doesn't start.



## HDMI to component converter

It converts HDMI outputs to component analog and stereo audio. Use when your device needs to connect to monitors or projectors that don't support HDMI formats

**Inputs:** HDMI A female (formats supported are 480i/576i/576p/720p/1080i/1080p)

**Outputs:** Three RCA females Red green blue and RCA females for audio signals. These signals are also known as YPbPr.



## HDMI to VGA converter

It converts HDMI outputs to VGA analog and stereo audio. Use when your device needs to connect to monitors or projector that don't support HDMI formats

**Inputs:** HDMI A female (formats supported are 480i/576i/576p/720p/1080i/1080p)

**Outputs:** 15 pin HD (VGA female) and RCA females for audio



## Head Phone extender

It takes one headphone connection and allows up to eight individual listeners. Has 1/4" jacks, if mini 3.5mm phones will be used please ask for adaptors.



## **Phantom power supply**

Inline external 48 volt phantom power supply, use when a condenser type microphone or any other device is being used that requires this voltage and a mixer isn't available to provide it.

XLR male female connectors



## **Telephone handset TAP**



Use when you need to get a good quality recording of a phone conversation

Connect the QuickTap IFB between your telephone and handset for quick access to audio from any telephone system.

Simply unplug the handset coily cord from the base of your telephone and plug it directly into the QuickTap

IFB, then, using the supplied cable, connect the QuickTap IFB to the base of the telephone.

The 600 ohm male XLR lets you take audio from the phone line and route it into a mixer or headset amplifier. You can also plug an IFB earpiece directly into the 1/8" mini jack. However, keep in mind this is a passive box with a 600 ohm output; the earpiece should have impedance greater than 600 ohms to get usable output.

Both audio output jacks contain a nice mix of the audio coming from the phone line and the handset audio going into the phone. Any conversation over the handset is sent over both audio output jacks. Or you can leave the handset disconnected and just hear audio from the far end of the call.

The QuickTap IFB does not work with cellular telephones or any telephone with a keypad in the handset.

## Scan converter UXGA to NTSC video

### **Kramer model VP-501xl**

It converts computer monitor output to NTSC video, either composite or S-video.

Can be used to record computer outputs or convert for conferencing equipment etc...

Inputs; 15pin HD (VGA connector)

Outputs; RCA female or S-video female or BNC



## USB digital and analog audio interface

### **Loan pool # EST-101**

Interface for guitars and microphones into a USB connection.

It has digital and analog ins and outs.

USB bus Powered.

It is ideal for laptop computers. The power supply runs from the computer via USB cable. No need for AC adaptor. Connect your audio equipment to your Mac or PC with the UA-3D and just one USB cable!

2 Analog and Digital (Optical) In/Out

Guitar and microphone inputs



### Features:

5.1 channels Surround, Dolby Digital output

### **Channels:**

- 1 stereo record, 1 stereo playback. Full duplex

**Signal Processing:** AD/DA 16-bit

**Sample Rate:** Digital In 32/44.1/48 kHz or Digital Out 32/44.1/48 kHz

**Frequency Response:** 20 Hz to 20 kHz

**Audio Driver Compatibility:** MME



## USB Preamp

Allows you to connect XLR or ¼" TRS sound devices to your laptop. Battery or AC power provides Phantom power for condenser type microphones.

The USB DualPre from ART offers two channels of the sound quality that put ART on the map, and adds the convenience of USB to create a great bus-powered portable recording solution. Add a laptop, and you can capture your music anywhere the inspiration strikes. Not just a portable device, the USB DualPre is great for desktop operations as well, and offers plug-and-play compatibility with both Mac and Windows computers. Plus, you can power the USB DualPre via battery or the included power supply.



### Monitoring

For monitoring, a 1/8-inch TRS mini headphone jack with level and monitor mix controls on the rear allow for latency free local monitoring of the inputs while recording as well as playback monitoring of the USB bus. The monitor mix is also routed to the 1/4-inch TRS balanced outputs. This lets you use the 1/4-inch outputs as either preamplifier outputs or as the monitor feed to your powered monitors.



### Mac and Windows Compliant

The USB interface is fully compliant with the USB 1.1 specification and uses USB adaptive mode for playback and USB asynchronous mode for record.



## **VGA wireless transmitter**



Connect a laptop to a projector without cables. Uses the laptop's wireless card to connect to this device and then this device is connected to a LCD projector. The Transmitter will act as a Gateway to the internet if a wired Ethernet connection is available at the transmitter. A small piece of software will need to be installed on the laptop from the transmitter in order for this to work, so make sure you have permissions on the laptop to install software. Laptop must have a wireless network card.

MAC users will need to use a thumb drive with the needed software which we provide.

## **Dazzle video creator**

Capture DVD-quality video from any camcorder, TV or VCR with Dazzle Digital Video Creator 150 (DVC150). The DVC150 has a high-speed USB 2.0 interface to the computer. The user-friendly Pinnacle Studio HD drag-and-drop interface makes it a breeze to create your own high-quality HD movies with music, montage themes, transitions, animations and effects.



## **Film to Video convertor**

16mm film to composite Video and audio convertor, has a built in CCD camera, plays both magnetic and optical sound, output is BNC and RCA, Easy to load



## **Turntable**



Turntable with 33 1/3 rpm and 45 rpm speeds, has built in preamp that is switchable, RCA output connectors, stereo.

# Quick Guide

<b>Welcome to ATUS &amp; Rules of Check Out.....</b>	<b>4</b>
<b>Equipment Checkout / Return Procedures.....</b>	<b>5</b>
<b>A. Photography.....</b>	<b>6</b>
<b>B. Photography &amp; Video.....</b>	<b>8</b>
<b>C. Video.....</b>	<b>12</b>
<b>D. Audio Recording.....</b>	<b>16</b>
<b>D1. Audio Recording – Microphones.....</b>	<b>21</b>
<b>E. Computers.....</b>	<b>27</b>
<b>F. Media Storage.....</b>	<b>30</b>
<b>G. Lighting.....</b>	<b>32</b>
<b>H. Projection/Display/Video Players.....</b>	<b>34</b>
<b>I. Sound Systems.....</b>	<b>43</b>
<b>J. Accessories and Miscellaneous Equipment.....</b>	<b>51</b>

End.

Originally created by Ky Metsker, Summer 2011.

Updated and redesigned by Hung Le, Summer 2013